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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,000	02/01/2006	Kwang-jin Lee	NEK0012US	9626
23413 7590 10/27/2010 CANTOR COLBURN LLP 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER LENIHAN, JEFFREY S				
ART UNIT		PAPER NUMBER		
1765				
NOTIFICATION DATE		DELIVERY MODE		
10/27/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary

Application No.

10/567,000

Applicant(s)

LEE ET AL.

Examiner

Jeffrey Lenihan

Art Unit

1765

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 7, 11, 13, 20 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 7, 11, 13, 20 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is responsive to the amendment filed on 9/09/2010.
2. The objections and rejections not addressed below are deemed withdrawn.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/09/2010 has been entered.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 3, 4, 7, 11, 13, 20, and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claim 1 has

been amended to recite an impact modifier comprising (A) a seed latex, (B1) a continuous acryl rubber core, (B2) an acryl-silicone rubber core, and (C) a graft shell; these limitations are inherited by all dependent claims. The original disclosure teaches an impact modifier having a hybrid core which comprises an acryl-rubber core and a silicone rubber core; the original disclosure does not support an impact modifier having a first core which is an acryl rubber and a second core which is an acryl-silicone rubber as currently recited in the claims.

7. Claims 1, 3, 4, 11, 20, and 23 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the inclusion of one or more of methyl acrylate, ethyl acrylate, butyl acrylate, or (meth)acrylonitrile in the shell; does not reasonably provide enablement for the generic term "aiding monomer." The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with this claim.

8. Case law holds that applicant's specification must be "commensurately enabling [regarding the scope of the claims]" *Ex parte Kung*, 17 USPQ2d 1545, 1547 (Bd. Pat. App. Inter. 1989) otherwise undue experimentation would be involved in determining how to practice and use applicant's invention. Although the statute itself does not use the phrase "undue experimentation", it has been interpreted to require that the claimed invention be enabled so that any person skilled in the art can make and use the invention without undue experimentation as stated in *Ex parte Forman*, 230 USPQ 546,

547 (Bd. Pat. App. Inter. 1986) and in *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

9. Specifically, in *In re Wands* the Court set forth a non-exhaustive list of factors to be considered in determining whether undue experimentation would be involved in making and/or using the claimed invention. These factors include, but are not limited to : (a) the breadth of the claims; (b) the nature of the invention; (c) the state of the prior art; (d) the level of one of ordinary skill; (e) the level of predictability in the art; (f) the amount of direction provided by the inventor; (g) the existence of working examples; and (h) the quantity of experimentation needed to make or use the invention based on the content of the disclosure.

10. Applying these factors to claim 1, it is noted that the specification does not define the term "aiding monomer" or provide any information regarding the functional groups/structure/properties a monomer must have to qualify as an aiding monomer. The specification provides no direction or working examples (cf. factors (f) and (g)) for any "aiding monomer" other than the specific monomers listed in paragraph 7 above. Thus, the only portion of the specification that refers to the term "aiding monomer" recited in claim 1 is original claim 13 which only recites the use of an aiding monomer which is one or more monomer chosen from the specific compounds listed above.

11. Claims 1, 3, 4, 7, 11, 13, 20, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claim 1 recites the limitation that the shell comprises "0.1 to 20 parts by weight of an aiding monomer;" this limitation is inherited by dependent claims 3, 4, 11, 20, and 23. As noted earlier in this Office Action, the specification does not define the term "aiding monomer." It is therefore unclear what monomers fall within the scope of the limitation "aiding monomer."

13. Claim 1 states that the claimed impact modifier comprises both an acryl rubber core (B1) and an acryl-silicone rubber core (B2); however, the claim further states that the polyorganosiloxane rubber phase of core (B2) is dispersed onto the inner part and surface of the core (B1). As currently written, the claim therefore indicates both that cores (B1) and (B2) are separate components and that core (B1) is a part of core (B2). As a result, it is unclear what structure the claimed impact modifier is intended to have.

14. In describing component (C) of the claimed impact modifier, claim 1 recites the limitation "the acryl-silicone hybrid rubber core." There is insufficient antecedent basis for this limitation in the claims. The examiner suggests amending the claim to recite "the acryl-silicone rubber core" so that consistent terminology is used throughout the claims.

15. Claims 3 and 4 both recite the limitation "the acrylic seed latex" in claim 1. There is insufficient antecedent basis for this limitation in the claims. The examiner suggests amending the claims to recite "the acryl seed latex" so that consistent terminology is used throughout the claims.

Response to Arguments

16. The rejection of the pending claims over the combination of Ahn et al, WO 2004/058839, in view of Miyatake et al, US5804655, is withdrawn in view of applicant's amendment to independent claim 1 stating that the claimed impact modifier comprises both an acryl rubber core and an acryl-silicone rubber core.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Lenihan whose telephone number is (571)270-5452. The examiner can normally be reached on Monday through Thursday from 7:30-5:00 PM, and on alternate Fridays from 7:30-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/
Primary Examiner, Art Unit 1765

/Jeffrey Lenihan/
Examiner, Art Unit 1765

/JL/